

BLOCK V MODULE DESIGN SUMMARY

JET PROPULSION LABORATORY

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Objective

- Design to Be Commercially Viable
- Advance in State of the Art Over Block IV
- Improved Reliability and Durability
- Consider System Implications

Contract Requirements

- Preliminary Design of Module
 - Electrical
 - Thermal
 - Mechanical
- Preliminary Inspection System Plan
- Documentation

Schedule

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|----------------------|-------------------------|
| • RFP Issued | Feb. 27, 1981 |
| • Proposals Received | April 10, 1981 |
| • Contracts Started | Aug. 7 - Sept. 25, 1981 |
| • Completions | Nov. 81 - Feb. 82 |

Module Characteristics

	Size (cm)		Mass (kg)	V _{no} (V)	NOCT °C	P(NOC) (W)	P _p (W)	Efficiency (%)	
	Length	Width						NOC	PEAK
ARCO	122	61	11	4.8	49	50	72	8.4	9.7
GE	123	63		14.3	61	58	90	9.2	11.5
MTSEC	168	120		17.5	47	126	176	7.8	8.8
RCA	122	118	22.6	5.3	42	86	114	7.6	8.0
Solarex	138	96	23.6	15.0	49	77	108	7.2	8.1
Spire	113	61	7.3	15.0	49	54	78	10.1	11.3

NOC 80 mW/cm², AM1.5, NOCTNOCT 80 mW/cm², 20°C Ambient, 1 m/sec WindPEAK 100 mW/cm², AM1.5, 25°C

Cell and Circuit Features

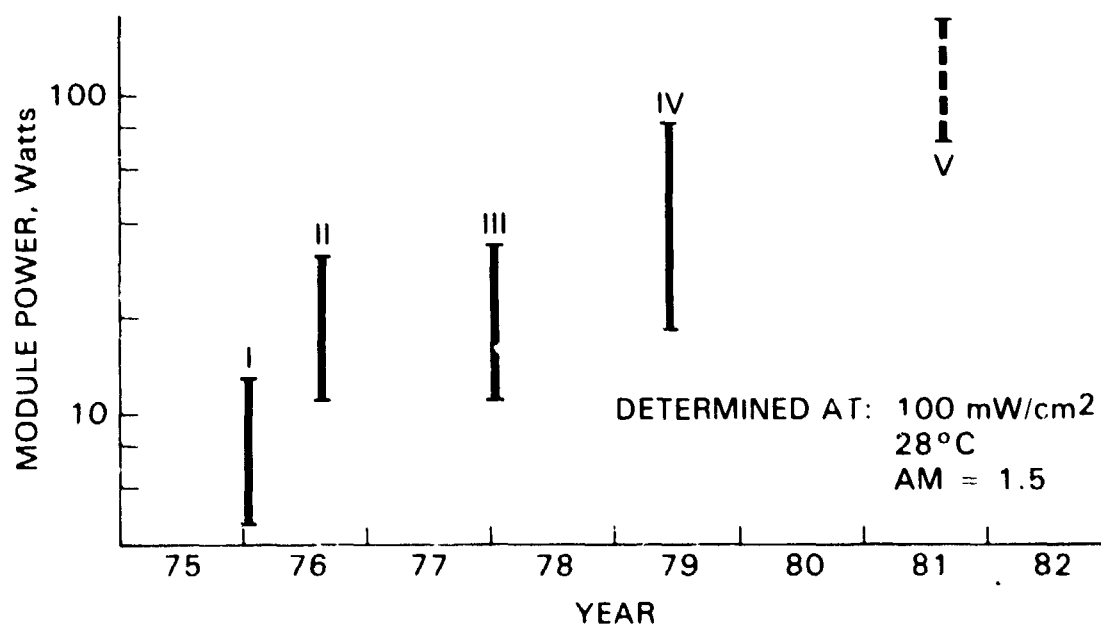
	Size (cm)	Base Material	Encapsulated Cell Efficiency		Total Cells	Series Cells	Parallel Cells	Series per Diode	Number of Diodes
			PEAK	NOC					
ARCO	10.3 (dia)	Cz	13.4	11.6	56	11	6	-	0
GE	10x10	Cz	12.9	10.4	72	36	2	12	3
MTSEC	5x10	EFG	9.8	8.8	352	44	8	11	4
RCA	10 (dia) w/flats	Cz	10.2	9.6	144	12	12	-	0
Solarex	10x15	Semi Crystal	9.2	8.2	78	39	2	13	3
Spire	10 (dia) w/flats	Cz	14.4	12.6	72	36	2	12	3

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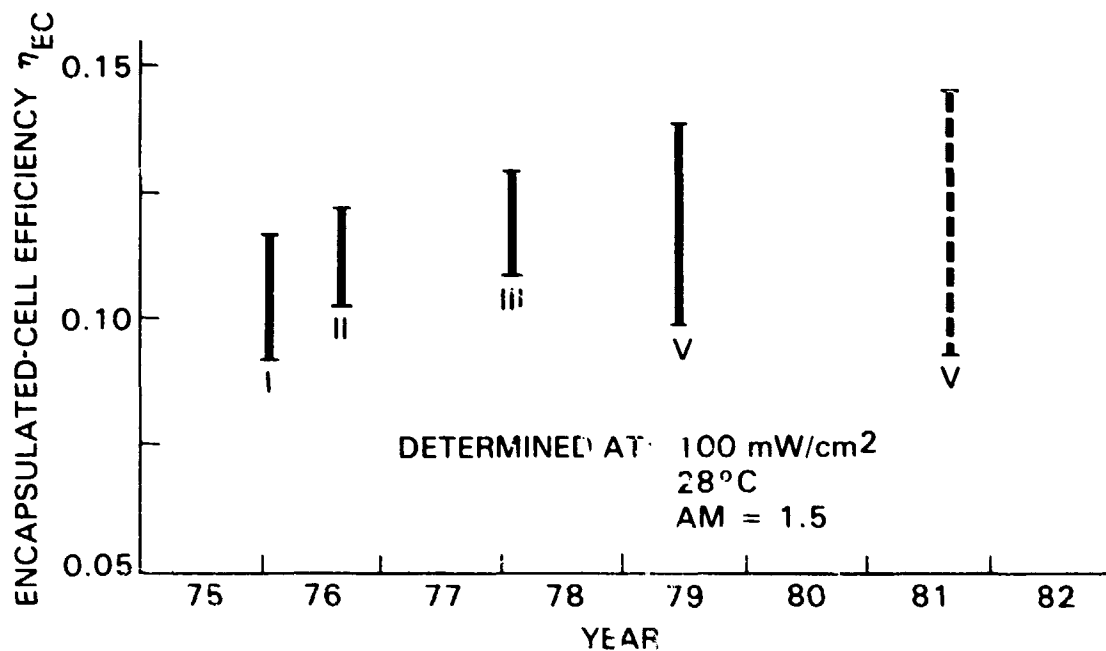
Encapsulation Features

	Top Cover or Superstrate	Pot- tant	Spacer	Back Cover or Substrate (From inside out)	Frame
ARCO	3.18-mm Tempered Water-white glass	EVA	None	Ted-Poly-Al-Ted	Anodized Al
GE	5-mm Tempered Sunadex Glass	EVA	Scrim	Ted-Poly-Al-Ted	None (Shingle)
MTSEC	5-mm Tempered Water-white Glass	EVA	-	Poly-Al-Ted	None
RCA	3.18-mm Tempered Water-white Glass	EVA	Craneglas	3.18-mm Tempered Float Glass	EPDM Gasket
Solarex	3.18-mm Tempered Water-white Glass	EVA	Craneglas	Poly-Ted	Gasket
Spire	3.18-mm Tempered Heliolite or Solatex Glass	EVA	Glass Fiber	Tedlar	EPDM Gasket & Glide

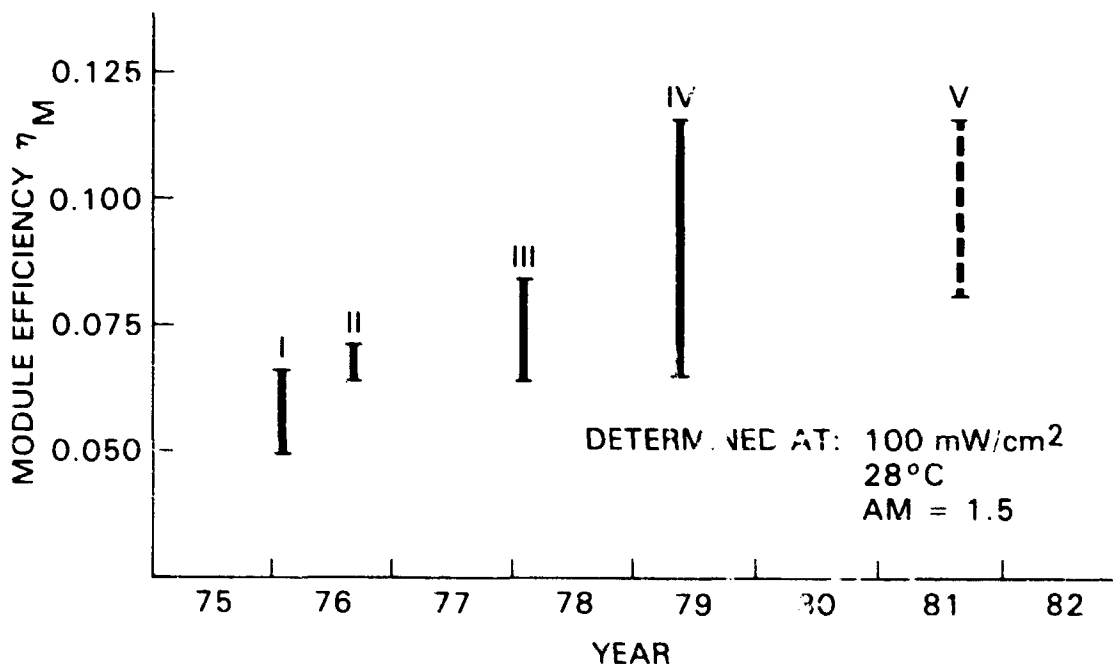
Module Power Trend



Cell Efficiency



Module Efficiency



Packing Factor

